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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,608	07/31/2003	John Santhoff	30287-95	5562

44279 7590 02/02/2006

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CARLSBAD, CA 92008

EXAMINER	
KIM, KEVIN	

ART UNIT	PAPER NUMBER
2638	

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/633,608	SANTHOFF ET AL.	
	Examiner	Art Unit	
	Kevin Y. Kim	2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) *13-26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12,27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

RESTRICTION/ELECTION

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-12,27, drawn to UWB, classified in class 375, subclass 244.

II. Claims 13-18, drawn to synchronization, classified in class 375, subclass 354.

III. Claims 19-26, drawn to pulse generating system, classified in class 327, subclass 100.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I, II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, inventions I, II and III each have separate utilities such as UWB demodulator, synchronizer and pulse generator respectively. See MPEP § 806.05(d).

3. Because these inventions are distinct for the reasons given above and the search required for one of the groups is not required for another of the groups, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Peter Martinez on January 26, 2006 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-12 and 27. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the

currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 5, 7 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Libovo et al (US 6,642,878).

Libovo et al discloses a method of obtaining data from an electromagnetic signal (UWB), comprising the steps of;

receiving a modulated electromagnetic signal, col. 2, line 54,

sampling the received signal, see col. 2, lines 60-65 and

demodulating the signal without mixing the signal with a second electromagnetic signal.

As also admitted, the UWB communication does not need mixing the received signal with a local signal since it does not have a carrier signal.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 2-4, 6, 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Libovo et al, as applied to claim 1 above in view of Batra et al (US 6,985,532).

Claim 2, 3 and 6.

Libovo et al discloses an electromagnetic pulse sampling circuit, see Fig.1 and a plurality of electromagnetic pulse sampling circuits, see Fig.2A. Libovo et al does not specify the sampling rate. However, since the sampling circuit is used for demodulation of a UWB signal whose typical frequency is in the order of a GHz it would have been obvious to sample the signal at a rage ranging between about 10 pico-seconds to about 500 pico-seconds for the purpose of providing Nyquist sampling rate for sampling such a UWB frequency. See Batra et al, col.1, lines 20-35.

Claims 4, 8, 10 and 12.

The UWB communication uses one of pulse modulation techniques, one of which pulse amplitude modulation (PAM). See Batra et al, col.1, lines 36-45. Differential PAM, a variation of PAM, compares the amplitude of a later signal sample to the amplitude of a previous sample to obtain data so that it has a better S/N ratio in a noisy communication environment. Thus, it would have been obvious to one skilled in the art at the time the invention was made to compare the amplitude of a later signal sample to the amplitude of a previous sample to obtain data when DPAM is used to mitigate the noise level of the communication medium.

Claims 9 and 11.

Libovo et al does not specify the sampling rate. However, since the sampling circuit is used for demodulation of a UWB signal it would have been obvious to sample the signal at a rage ranging between about 10 pico-seconds to about 500 pico-seconds for the purpose of demodulating a GHz frequency. See Batra et al, col.1, lines 20-35.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miao (US 6,744,832) describes GHz UWB frequencies.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kevin Kim/

KEVIN KIM
PATENT EXAMINER